

District of Columbia  
Department of Energy and Environment



**NOTICE OF FUNDING AVAILABILITY  
AND  
REQUEST FOR APPLICATIONS (RFA)**

A Characterization Study of Direct Geothermal Resource Potential for Ground Source Heat  
Pump Technologies  
(Short name: The DC Geothermal Resource Study)  
RFA # 2018-1718-EA

**Publication Date:** 10/20/2017

**Application Deadline:** 1/12/2018 at 4:30pm

Government of the District of Columbia  
Department of Energy and Environment  
1200 First Street, NE  
5th Floor  
Washington, DC 20002  
(202) 535-2600



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## **SECTION 1. GENERAL INFORMATION**

### **1.1 Introduction**

The Department of Energy and Environment (DOEE) solicits grant applications from eligible entities (called Applicants). The goal of this Request for Applications (RFA) is to research the potential for installation of geothermal energy and storage systems in conjunction with the use of solar energy sources to facilitate the development of net-zero energy buildings in the District. The DOEE Energy Administration (EA) will administer this RFA.

### **1.2 Purpose of the Grants**

The purpose of this grant is to receive an analysis of the potential use of geothermal resources in the District for thermal storage and energy in conjunction with on-site generation of solar energy to develop net-zero energy buildings. The analysis should include a technical, economic, and implementability evaluation of how Ground Source Heat Pumps (GSHPs) paired with solar systems can be used to address heating and cooling needs across the District, including identification of buildings or neighborhoods with a high net-zero energy potential using solar and GSHPs. There will also be an evaluation of the policy frameworks that enable and/or hinder the use of geothermal resources.

### **1.3 Source of Funds**

The source of funds for the grant is Renewable Energy Development Fund.

### **1.4 Competition for a Grant Award**

This RFA is competitive. Each Applicant must demonstrate its ability to carry out the activities for the grant for which it applies (called a “project”). A review panel will evaluate the applications for each advertised grant according to the stated list of criteria in each project’s description. The proposal/s with the highest score/s will be awarded the grant.

Specifically, grant awards will be made based on eligibility (Section 1.6), the extent to which the proposed project fits within the scope and available funding of the grant, strength of the application, and the organization’s capacity to achieve the grant’s goals.

Each Applicant may submit an application for more than one project, if applicable. If an Applicant responds to more than one project, it must do so in a separate proposal and submit all corresponding required documents.

### **1.5 Projects and Funds Available**

Project Name	Amount
A Characterization of Direct Geothermal Potential for Ground Source Heat Pumps.	\$70,000

## 1.6 Eligibility

The following are eligible to apply if an “x” appears:

- ☒-Nonprofit organizations, including those with IRS 501(c)(3) or 501(c)(4) determinations;
- ☐-Faith-based organizations;
- ☐-Government agencies
- ☒-Universities/educational institutions; and
- ☒-Private Enterprises.

Continuing conditions of eligibility are that the information in the application is complete and truthful and that the Applicant at all times is able to meet any material conditions stated in its application. For instance, if an Applicant’s ability to fulfill the terms of the grant is based on the availability of skilled staff and those staff should leave after the application’s submittal or the grant award to the Applicant, the Applicant has the responsibility to advise DOEE in writing of this change in material conditions. Another example of change in material conditions that could result in the loss of eligibility would be the loss of the Applicant’s tax-exempt status.

## 1.7 Definitions

**District** - The District of Columbia.

**Grantee** - The person provided a grant by the District, including a sub-grantee.

**Person** - A natural person or a legal entity, including a partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, cooperative, the District government and its agencies, and the federal government and its agencies.

**Writing** - A tangible or electronic record of a communication or representation, including handwriting, typewriting, printing, photostat, fax, photography, word processing computer output, and e-mail. A "signed" writing includes an electronic symbol or process attached to, or logically associated with a writing, and executed or adopted by a person with the intent to sign the writing.

## 1.8 Permissible Use of Grant Funds

A Grantee may use grant funds only for allowable grant project expenditures. Grant funds related to work performed will be provided on a reimbursement basis, except that an advance of funds

may be provided for grant administration expenses in limited circumstances for good cause approved by DOEE at its sole discretion.

## **1.9 Grant Monitoring**

In its sole discretion, DOEE may use several methods to monitor the grant, including site visits, periodic financial reports and the collection of performance data. Each grant is subject to audit.

## **1.10 General Terms and Conditions**

Appendix 1, “General Terms and Conditions” is incorporated by reference in this RFA. Applicants and Grantees must comply with any and all applicable terms and conditions outlined in Appendix 1.

The Renewable Energy Portfolio Standard Act of 2004 (D.C. Law 15-340, D.C. Official Code §§ 34-1431 -40), including § 34-1436.

## **1.11 RFA Conditions - Promises, Certifications, Assertions, and Assurances**

Appendix 2, “Applicant’s Promises, Certifications, and Assurances” (“PCA”), is incorporated by reference in this RFA.

## **1.12 DOEE’s Authority to Make Grants**

DOEE has grant-making authority under:

- The Renewable Energy Portfolio Standard Act of 2004 (D.C. Law 15-340, D.C. Official Code §§ 34-1431-40), including § 34-1436(b) and (c)
- The Water Pollution Control Act of 1984, effective March 16, 1985, as amended, (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*);
- The District Department of the Environment Establishment Act of 2005, effective February 15, 2006, as amended, (D.C. Law 16-51, D.C. Official Code § 8-151.01 *et seq.*);
- The Comprehensive Stormwater Management Enhancement Amendment Act of 2008, effective March 25, 2009, (D.C. Law 17-371; D.C. Official Code § 8-152.01 *et seq.*); and
- Other applicable laws and regulations.

## **1.13 Conflicts between RFA and Applicable Law**

If any requirement of this RFA conflicts with a provision of any applicable law, including a District or federal law or regulation, the applicable legal provision shall control.

## **SECTION 2. SUBMISSION OF APPLICATION**

### **2.1 RFA Release Date**

The release date of this RFA is 10/20/2017.

### **2.2 Obtaining a Copy of the RFA**

A person may obtain a copy of this RFA at [doee.dc.gov](http://doee.dc.gov) or by requesting a copy through any of the methods listed in Section 2.6. Please add to any note the heading “RE: RFA 2018-1718-EA.”

### **2.3 Applications: When, What, and Where**

**When:** All applications must be received at the address below by 4:30 p.m. on 1/12/2018.

Applications will be dated and recorded as “received” pending review by DOEE for completeness. DOEE considers an application to be “filed” only if all the required materials are submitted. Late or incomplete applications will be considered received, not filed.

**What:** The contents of the Application are specified in Section 3. Each applicant must submit:

Five paper copies of the application; and

One electronic copy.

The Department will not receive faxed copies.

**Where:** The paper copies must be filed with DOEE at the following address:

**District of Columbia Department of Energy and Environment**

**RFA – Grants**

**1200 First Street NE**

**5<sup>th</sup> Floor**

**Washington, DC 20002**

**Attn: RFA 2018-1718-EA**

Email an electronic copy, formatted as a .pdf file, to: [edward.yim@dc.gov](mailto:edward.yim@dc.gov).

## 2.4 Award Announcement

DOEE expects to notify each Applicant in writing of its award status within six to twelve weeks after the application due date.

## 2.5 Updates and Questions and Answers (Q & A)

Additional information may become available before the application is due. It is the Applicant's responsibility to stay up-to-date on the status and requirements of the grant for which it is applying.

DOEE welcomes questions seeking clarification of matters in this RFA. Questions about the RFA should be sent to [GeothermalRFADOEE@dc.gov](mailto:GeothermalRFADOEE@dc.gov) with "RE: RFA 2018-1718-EA" in the subject line.

DOEE will publish updates and Questions and Answers (Q&A) regarding the RFA at [doee.dc.gov](http://doee.dc.gov). DOEE will also create an email list to send updates and information regarding the RFA. A person can be put on the email list by immediately emailing [GeothermalRFADOEE@dc.gov](mailto:GeothermalRFADOEE@dc.gov) with the subject line "RE: RFA 2018-1718-EA – Add me to the email list."

DOEE will provide the information to those on the email list at the same time the information is uploaded to the DOEE website. Paper copy updates will be available for pickup at DOEE's offices by appointment. DOEE will not mail out updates or Q&A materials.

The cut-off date for receipt of any questions is one week prior to the application deadline.

## 2.6 DOEE Contacts

DOEE can be contacted about this RFA (use the RFA's short name and number whenever possible) by:

- (a) **Emailing** [edward.yim@dc.gov](mailto:edward.yim@dc.gov) with "RE: RFA 2018-1718-EA" in the subject line;
- (b) **In person** by making an appointment with (Edward Yim at (202) 671-4519 and mention this RFA by name); or
- (c) **Write** DOEE at 1200 First Street NE, 5th Floor, Washington, DC 20002, Attention: Edward Yim RE: RFA 2018-1718-EA on the envelope.



## **SECTION 3. APPLICATION CONTENT**

### **3.1 Format**

Proposals must be formatted as follows:

- (a) Use plain, white, 8 ½" x 11" recycled paper with one-inch margins.
- (b) Applications should be double-sided to the extent possible;
- (c) Limit each project description to 10 double-spaced pages. Budget tables, flowcharts, photographs, the work plan, and other supporting documentation may be attached in addition to the project description
- (d) Staple the application in the top left-hand corner. Do not use a plastic cover or other form of binding.

### **3.2 Proposal Content**

DOEE intends to fund a project that will benefit the environment, and, in particular, the environment of the District. The proposal should use the following format and explain, in increasing levels of detail, how the Applicant will accomplish this.

(Note: Before drafting the proposal, please read the project description very carefully to see if there are restrictions for the DOEE grant. For instance, certain activities might be required to take place in the District or the scoring might give extra points to labor sourced in the District.)

#### **(a) Cover Sheet**

Include a cover sheet in the format specified in Appendix 3. Make certain that the funding amount requested on the cover sheet matches total amount requested in your budget and budget narrative.

#### **(b) Project Summary**

Provide a brief one paragraph summary that explains the project. This summary is not part of the 10-page proposal limit.

#### **(c) Project Description**

Organize this 10-page section of your application in accordance with the scoring rubric of section 7 of this RFA. As an exposition to the specific line items in the scoring rubric, state the following at the start of the proposal:

(1) Purpose and Objectives

State how this project will benefit the environment and the specific objectives this project will achieve.

(2) Target Audience

Identify the target audience. Who will this project engage? Who will benefit from the project?

(3) Project Outcomes, Outputs, and Activities

The proposal should connect the funded activities to quantifiable outputs and ultimately desired outcomes. This enables reviewers to evaluate what the proposed project will achieve if funded.

**Activities** are undertaken to achieve the outputs and outcomes. For example, a proposal could request funding to support a tree-planting activity in a city. This activity will yield a quantifiable output.

An **output** is a short-term result achieved as a result of an activity. For example, at the end of the project period, after several sessions of tree-planting, X number of trees will be in the city. This quantifiable output will yield various project outcomes.

A **project outcome** is a medium to long-term result that occurs and/or continues after the project ends. For example, after several sessions of tree-planting activities, this project yielded an output of X number of trees planted in the city. Medium to long-term outcomes of this project include: beautification of the city, increased environmental awareness of residents, and improved air quality.

(4) Methods

Describe how activities will be accomplished.

(5) Measurement of Project Success

Provide quantifiable measurements. For example, a tree planting project might measure the number and kinds of trees planted. A trash removal project might measure the pounds of trash removed. A stormwater project might measure the amount of stormwater captured.

(6) Project Budget.

You must submit a numeric budget and a separate budget narrative as part of your application package. For the numeric budget, DOEE strongly urges applicants to use the budget template format provided (Appendix 4). The budget narrative must explain and justify every line item in

the numeric budget. The explanation should be thorough enough to allow a reviewer to understand why expenditure levels were chosen and how the line item amounts were derived. For example: “personnel will be paid \$xx per hour times xx hours.”

If the Applicant seeks an advance payment, it must request advance payment in its proposal and explain why an advance payment is requested. See Section 6.2.

Resources provided by the applicant should appear in the column titled “Non-DOEE Match,” meaning the Applicant intends to provide the indicated resources (i.e., the “match,” and that the resources do not come from DOEE). Entries in this column could include both dollars and the value of the in-kind contributions. For example, in-kind contributions can include staff time, volunteer services, already-paid licensing fees, materials, supplies, and the use of equipment or real estate.

Volunteer hours provided to a grantee or sub-grantee must be valued at rates consistent with those the Applicant’s organization ordinarily pays for similar work, including salary and fringes. If the grantee or a sub-grantee does not have employees performing similar work, the rates must be valued the same as rates ordinarily paid by employers in the same labor market for similar work.

The Applicant must verify that all costs in the budget are allowable.

Typical allowable costs are:

1. Rental of office space, some vehicles, and some equipment;
2. Employee salaries and benefits;
3. Contractor labor, including professional services;
4. Accounting and bookkeeping services;
5. Communications, including telephone and data services;
6. Printing, reproduction, including signage;
7. Materials and supplies;
8. Computers and printers;
9. Small tools;
10. Some field equipment, typically below \$5,000 in value;
11. Postage and shipping;
12. Necessary travel, meals and lodging; and
13. Insurance.

Non-Allowable costs include:

1. Most major equipment, like vehicles;
2. Lobbying, including salaries and overheads and out-of-pocket expenses;
3. Entertainment;
4. Interest payments on loans;

5. Most food; and
6. Land purchases.

DOEE will require documentation for grant payments, and the entire grant will be subject to audit.

**(d) Applicant.**

**(1) Organization.**

Describe the organization's history, mission, and current or past projects that demonstrate the organization's capacity to achieve the project's goals. This section should be limited to one page. To provide further information, the Applicant can reference its website or attach organizational brochure or resume.

**(2) Key personnel.**

Identify the key team members for the project and provide brief biographies or their resumes. The team members can be staff, volunteers or contractors.

**(3) Past performance on District Grants/Contracts.**

Identify District agencies from which the Applicant has received funding as a contractor, grantee, or partner in the past five years and provide specific information including:

- The grant(s) or contract(s) title;
- The District agency/agencies;
- The grant number(s), contract number(s), or other identifier(s);
- The amount(s) paid; and
- What was accomplished as a result of the funding(s).

Briefly describe any disputes, investigations, or audits related to any of these District grants or contracts, grants, or partnerships in the past five years.

**(4) Partners.**

Sometimes partnerships can improve the success of a project. These partnerships might be with government agencies, nongovernmental organizations (NGOs), companies, or individuals. If a partner is to be involved in the project, the Applicant must describe the partner's involvement

and resource commitments. The proposal must identify and attach a letter of support on the partner's letterhead, signed by an authorized official if the partner is a government agency, NGO, or business entity.

In lieu of a letter, an Applicant may attach an email from the partner (or an authorized official if the partner is a government agency, NGO, or business entity) that states support of the project and identifies the partner's name, address, website, and a contact name, telephone number, and email address.

For the following types of partners, provide the documentation indicated.

i. District of Columbia Public Schools

If the Applicant will work with the District of Columbia Public Schools (DCPS), it must include a letter of support from the principal of each school with which it will work, and, if available, from each participating teacher. Teachers and principals may send a joint letter.

ii. Property Owner

If the Applicant will work on public land, it must submit a letter of support from the managing agency. Similarly, if the Applicant is to work on private land, it must submit a letter of support from each property owner. If the project includes construction or installation, the letter must acknowledge that the property owner will be responsible (either directly or through an agreement with another entity) for project maintenance.

iii. Partnering Organization

If the Applicant has identified a project partner, it must include a letter of intent from the collaborating organization/s, agreeing to participate in the proposed project. The letter should demonstrate that the partnering organization understands the project presented for funding and the activities and/or services that the partner will provide.

iv. National Park Service

Projects that would be carried out on National Park Service (NPS) property will require NPS permission. Sometimes the paperwork supporting such permission takes extra time to complete. DOEE will accept more informal statements generated by responsible NPS officials, including emails.

### **3.3 Work Plan**

The application must include a proposed work plan that describes the timeline for project implementation.

### **3.4 Required Documents**

Each of the following documents must be filed as part of the proposal package. If the document is not in this filing, DOEE may classify the grant application as “received” but not “filed,” as specified in Section 2.3. However, if a government agency must issue a required document, and the Applicant has requested the document but not received it, DOEE may accept a copy of the Applicant’s request to the agency for the purpose of deeming the Application “filed.”

#### **(a) Certificate of Good Standing**

Each Applicant must submit a current Certificate of Good Standing from the District Department of Consumer and Regulatory Affairs. DOEE requires that the submitted Certificate of Good Standing reflect a date within a six-month period immediately preceding the application’s submission.

#### **(b) Promises, Certifications, Assertions, and Assurances**

Each Applicant must sign and submit the “Promises, Certifications, Assertions, and Assurances” (“PCA”) in Appendix 2. Signing the PCA is a condition of eligibility for this grant. If the Applicant is not prepared to sign the PCA, it should not apply for a grant. Compliance with the promises, certifications, and assurances in the PCA is a continuing condition of eligibility for this grant.

The PCA must be signed by the Applicant or, if the Applicant is an organization, by a duly authorized officer of the organization.

The PCA also includes a sworn statement verifying that the Applicant is not in arrears (i.e. is “current”) on all obligations outstanding to the District, including all District agencies. The Applicant must be “current” as of the date of the application and the date of a grant award. DOEE requires, as a condition of continuing eligibility, that a grantee stay current on such obligations during the period of the grant.

#### **(c) IRS W-9 Tax Form**

The Applicant must submit a current completed W-9 form prepared for the U.S. Internal Revenue Service (IRS). DOEE defines “current” to mean that the document was completed within the same calendar year as that of the application date.

#### **(d) Tax Exemption Affirmation Letter**

The tax exemption affirmation letter is the IRS’s determination letter of non-profit status. If this letter is not available, then the Applicant should provide its most recent IRS Form 990 tax return, if one was submitted. If no return has yet been filed, the organization can submit its application

for tax-exempt status. If the group has a supporting organization with an IRS tax-exempt status determination, then that organization's tax exemption affirmation letter should also be submitted.

**If there is no IRS tax exemption affirmation letter because the organization is a religious organization, then the Applicant may submit the best evidence it can of its status.** Examples of potential best evidence for this purpose include, but are not limited to (i) a letter from the leader of the organization verifying that the organization is a religious group; (ii) a letter from the group's board chair or similar official, verifying that the organization is a religious group; (iii) the Applicant's most recently submitted state sales or other tax exemption form, if it exists (Form 164 in the District of Columbia); or (iv) the state's issued tax exemption certificate or card, if it exists. (*See IRS publication no. 1828, Tax Guide for Churches and Religious Organizations.*)

**(e) Applicant's Current Fiscal Year Budget**

The Applicant must submit its full budget, including projected income, for the current fiscal year, using a format at least as detailed as that presented in Appendix 4. Also, the Applicant should submit a comparison of budgeted versus actual income and expenses of the fiscal year to date.

**(f) Applicant's Financial Statements**

If the Applicant has undergone an audit or financial review, it must provide the most recent audited financial statements or reviews. If audited financial statements or reviews are not available, the Applicant must provide its most recent complete year's unaudited financial statements.

**(g) Separation of Duties Policy**

The Applicant must state how the organization separates financial transactions and duties among people within the organization in order to prevent fraud or waste. This may be a statement that already exists as a formal policy of the organization, or the Applicant may create the statement for purposes of the application. The applicant should state which of these situations apply.

This statement should:

- Describe how financial transactions are handled and recorded;
- Provide the names and titles of personnel involved in handling money;
- Identify how many signatures the financial institution(s) require on the organization's checks and withdrawal slips; and,
- Address other limits on staff and board members' handling of the organization's money.

**(h) System for Award Management (SAM) with federal government**

If a project within this RFA is funded wholly or partially by federal funding sources, applicants for that project must be registered in the System for Award Management at [www.sam.gov](http://www.sam.gov) and provide evidence of this registration as part of its application package to DOEE.

## **SECTION 4. Review Panel and Application Scoring**

### **4.1 Review Panel**

This is a competitive grant. The review panel for the RFA will be composed of individuals with knowledge in the areas directly related to the RFA. The review panel will review, score and rank each Applicant's proposal.

The panel will recommend the top scorer for award of the grant.

Review panels vary in size, but typically are made up of three to five people. At least two members of the review panel will be from DOEE staff. Whenever practicable, each panel will include at least one person from outside of DOEE.

### **4.2 Scoring Criteria**

The reviewers score each proposal according to a list of criteria and the points available for each criterion. See section 7 of each project.

The applicant should read the grant description carefully to determine if matching funds or resources are required or if preference points are offered for matching funds.

## **SECTION 5. GRANTEE DOCUMENT REQUIREMENTS**

### **5.1 Submissions If Applicant Will Receive the Grant**

Upon acceptance of a grant award, the Grantee must provide the following documents.

#### **(a) Certificate of Insurance**

The Grantee shall submit a certificate of insurance giving evidence of the required coverage outlined in Appendix 1, General Terms and Conditions. DOEE will presume that the budget covers the cost of this required insurance and will not later adjust the grant award for this amount.

#### **(b) Assurance of Continued Truth and Accuracy**

Upon acceptance of the grant award the Grantee shall notify DOEE of any changes that may have occurred to its organization since the time of submission of its original application. See also Section 1.6.



## **SECTION 6. FILING REQUIREMENTS GENERAL PROVISIONS**

### **6.1 Reporting Requirements**

The grantee must submit the following reports as a condition of continuing eligibility for funding.

#### **(a) Quarterly Status Reports**

DOEE will provide a quarterly status report template with the grant award. These reports, which discuss grant activities for the preceding quarter, will be due on each of the following dates.

Quarter 1 (January - March):	April 15
Quarter 2 (April - June):	July 15
Quarter 3 (July - September):	October 15
Quarter 4 (October - December):	January 15

If a report's due date falls on a weekend or District holiday, the report will be due the next business day.

The report must detail: actions taken in the quarter preceding the report date, highlight outputs achieved, provide a financial update, and describe unforeseen changes to project timetable, staffing, or partnerships, as well as any other changes that may affect project outcomes.

#### **(b) Final Report**

DOEE will provide a final report template with the grant award. This report includes quantification by the grantee of the project's outputs and describes the extent to which project outcomes met or will meet the objectives of the funded proposal. The template requires submission of data and analysis of the data.

### **6.2 Reimbursement of Project Expenditures and Disbursement of Funds**

DOEE will not reimburse the Grantee for any work undertaken before DOEE notifies the recipient of the final award of the grant.

DOEE will reimburse the Grantee only for expenditures incurred to perform work under the grant. In limited cases, DOEE may advance funds at the beginning of the grant period for good cause approved by DOEE at its sole discretion. If the Applicant seeks an advance payment, it must request such payment in its proposal and explain why an advance payment is being requested.

DOEE operates on the District's fiscal year, which starts October 1 of a calendar year and ends September 30 of the next calendar year. The grantee may submit a reimbursement request or an

invoice at any time during the fiscal year for work performed within that same fiscal year. Each request/invoice must include supporting documentation.

Reimbursements will be mailed to the address on file for the grantee. DOEE may make electronic payments in lieu of mailing checks. DOEE generally pays grant invoices 30 days after DOEE receives them.

DOEE will withhold the final 10% invoiced under a grant until all required activities have been completed, including receipt of the final report.

## **SECTION 7. PROJECTS PROPOSED FOR GRANT FUNDING**

### **7.1 Summary: Project Title and Available Funds**

#### **Project Name**

A Characterization of Direct Geothermal Potential for Ground Source Heat Pumps.

#### **Introduction**

To make the District the healthiest, greenest and most livable city in the United States, the Sustainable DC Plan, [https://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/page\\_content/attachments/DCS-008%20Report%20508.3j.pdf](https://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/page_content/attachments/DCS-008%20Report%20508.3j.pdf), sets high performance goals that can be achieved only by investing in and rethinking how we approach the built environment. The District's Renewable Energy Portfolio Standards legislation contemplates the use of solar energy in conjunction with thermal storage, such as from geothermal sources, to help achieve these goals.

In the draft Clean Energy DC, [https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Clean\\_Energy\\_DC\\_2016\\_final\\_print\\_single\\_pages\\_102616\\_print.pdf](https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Clean_Energy_DC_2016_final_print_single_pages_102616_print.pdf), a roadmap to achieving the Sustainable DC Plan's energy and climate goals, it is estimated that 74% of the District's greenhouse gas emissions come from buildings. The plan outlines a strategy for a 50% reduction of greenhouse gas emissions (relative to 2006 levels) by 2032, while increasing the use of renewable energy and cutting the total energy use. To meet these goals, the District anticipates implementing a net-zero energy building code for single-family residential new construction by 2021, and a net-zero energy building code for commercial and multifamily new construction by 2026 all while implementing aggressive energy retrofits for existing buildings. This will require deep energy efficiency combined with rooftop solar photovoltaic systems and other on-site zero-carbon energy technologies.

Geothermal energy and storage technologies could have an important role in helping to achieve these energy and climate goals. Applicants should propose a study, including a methodological approach, of the District's direct geothermal storage potential, and to identify buildings or neighborhoods with a high net-zero energy potential when paired with on-site solar systems and geothermal energy storage. Once a geothermal potential map for the District is generated, it can be overlaid with the existing solar potential map to help identify areas and buildings with net-zero energy potential.

#### **Project Period**

The project must be completed and a final report delivered by August 30, 2018. This period can be extended and additional funding provided, depending upon the performance of the Grantee and the availability of funds.

## 7.2 Project Description

DOEE seeks proposals from eligible applicants for a study to identify and assess the geothermal storage resources of the District of Columbia's subsurface that includes, at minimum:

1. Use of various methods, including a literature review and collection of field data regarding:
  - Underground temperatures in the major geologic formations;
  - The permeability and location of groundwater in these geologic formations; and
  - The lateral extent, depth and thickness of the geologic resource and aquifers.
2. Evaluation of:
  - The potential impact of geologic features, such as fractures or buried stream channels;
  - The potential impacts to or from water bodies, groundwater, preexisting geothermal systems, and contaminated sites; and
  - Access to potential geothermal sites, including considerations for the District's underground infrastructure, such as public utility lines, and facilities operated by non-utility entities including the Washington Metropolitan Area Transit Authority (WMATA).
3. Review and assessment of:
  - The District's solar map hosted by Mapdwell to help identify homes, buildings, and neighborhoods with high solar potential that makes net-zero energy construction and retrofits more feasible.

In the application, the applicant should explain the following:

- The reason the approach/framework and methodology selected for the study is best suited to achieve the goal of the study;
- The full potential for geothermal to help develop net zero buildings by leveraging thermal storage to enhance rooftop solar systems; and
- Permitting requirements, right of way or other regulatory barriers which may undermine the potential for geothermal storage development.

The application should propose the methodology and framework that can best meet DOEE's goals. The applicant may propose and include a relevant discussion of other considerations that should be contemplated for geothermal energy.

The grantee will be responsible for developing suitable work plans for collecting field data, obtaining all permits from the relevant authorities, and conducting all field activities in a safe and responsible manner and in accordance with applicable District of Columbia and Federal laws and regulations. The research and analysis should be provided in a final report to include an executive summary, a GIS map of economically and geologically viable and geothermal locations (which can overlay on areas of the District with the greatest heating and cooling needs, and potential for rooftop solar) suitable for inclusion in the open data and DCGIS portals maintained by the District of Columbia's Office of the Chief Technology Officer (OCTO), and all supporting documents and materials used to develop the report.

## **7.3 Project Outcomes, Outputs, and Deliverables**

### **Project Outcomes**

The report will help DOEE achieve its goal of helping to decarbonize the energy supply for buildings in the District, by identifying potential sites where zero-carbon sources of energy can be used more readily. Achieving this goal is critical to realizing the vision of the Sustainable DC Plan as well as meeting the energy targets set forth in the draft Clean Energy DC.

### **Project Outputs**

- Develop a Geographic Information Systems (GIS) based map with layers showing the information listed under Project Outcomes including: ground thermal conductivity maps to help assess the economic potential for geothermal storage that would enable net zero buildings by being paired with on-site solar energy systems as indicated by the solar map hosted by Mapdwell; areas of greatest heating and cooling demand; areas not suitable for geothermal energy based on planning, zoning, infrastructure, and environmental restrictions; and the best locations for geothermal development;
- Work with DOEE to determine where geothermal energy would be off limits or encouraged based on known planning, zoning, infrastructure and environmental restrictions;
- Identify and discuss potential regulatory and/or environmental concerns, as appropriate;
- Provide recommended next steps for evaluation; and
- Recommendations to address permitting, right of way, or any other regulatory barriers to GSHP;
- The project management plan should allow for coordination and oversight by DOEE through conference calls and meetings; and time for DOEE review and approval of a draft report, a draft final report and the final report with attachments.

### **Deliverables**

The report should provide the following:

- an analysis of the District's geology and the specific thermal conductivity of the significant geologic units;
- the impacts of geologic conditions and features;
- the potential impacts to or from water bodies, groundwater, pre-existing geothermal systems and contaminated sites;
- access to potential geothermal sites including considerations for the District's underground infrastructure, such as public utility lines, and facilities operated by non-utility entities, including WMATA, to indicate where geothermal applications are most likely to succeed.

Areas in the District where net-zero development can be enabled by geothermal energy storage should be identified. The grantee should present the information using a Geographic Information System (GIS) that is compatible with and in a format that can be uploaded to the District's ARC-GIS system under the oversight of OCTO. The report will include an evaluation of the types of GSHP systems and weigh the pros and cons of each system to make a recommendation for a series of standard typologies within the District.

If open loops, standing water columns, or other systems that will move water freely through the sub-surface, or direct exchange systems, are considered viable options for the District, the grantee should, in consultation with DOEE, address environmental concerns, including the following questions:

- How is the technology compatible with considerations specific to Washington, DC especially in relation to required hydrogeology criteria, contaminant issues, subsurface utilities, limited development space, and other typical urban concerns?
- How are the environmental risks and issues identified in the literature regarding this technology addressed?
- How can potential difficulties encountered be avoided?
- What are the costs for installation as well as operation and maintenance over 10 years?
- Any other issues identified through consultation with DOEE.

The report should provide an analysis of the District's existing policies and programs, and recommend new policies and new programs to incentivize net zero energy development via the adoption of GSHP to complement onsite solar generation.

These deliverables should be made through the following items:

- Updated project management plan and schedule and plan;
- Initial draft report, including draft GIS maps;
- Draft final report, with GIS maps and all supporting documents and data files; and
- Final report with GIS maps and all supporting documents and data files.

The final report must be professionally proofread and edited.

## Scoring Criteria

All proposals will be scored according to the criteria below.

Scoring Criteria	Points
Demonstrates depth of expert knowledge and experience in geothermal analysis, design and installations in the District of Columbia, or in comparable locations.	30
Ability to provide and develop maps and data that identify renewable, geothermal resources especially in targeted areas.	20
Demonstrates the capacity and personnel in place to carry out a project with the project's required level of complexity.	15

Describes the proposed study in the application with sufficient details and clear explanations regarding the study objective (“what”), methods and approaches (“how”), and the goal (“why”).	15
Proposes a cost-effective project budget and adequate and reasonable justification for the use of funds.	10
Presents a clear and feasible schedule for project deliverables including a project management plan.	10

## SECTION 8. CHECKLIST FOR APPLICANTS

<p>Instructions for applicants: Ensure that the answers to all of the questions below are answered. In the column to the right, indicate Yes, No, or NA for not applicable. Include this completed document with application submission.</p>		
1.	Is the cover sheet (appendix 3) completed and signed – and included as part of the application?	
2.	Is a Table of Contents included in the application?	
3.	Is the applying organization eligible for funding from DOEE according to section 1.6 of the RFA?	
4.	Is the proposal formatted in accordance with section 3.1 of the RFA?	
5.	Does the proposal include a project description and all of the information required of the scoring rubric outlined in section 7 of the RFA?	
6.	Is a numeric budget, <b>and</b> budget narrative justifying each line item, included in the application?	
7.	Do the line items in the proposal budget consider the allowable and non-allowable costs in section 3.2 of the RFA?	
8.	Does the application package include the first page and signed last page of the DOEE Promises, Certifications, Assertions, and Assurances?	
9.	Does the application package include a Certificate of Good Standing that reflects a date within 6 months of the deadline date?	
10.	Does the application package include IRS W-9 Tax Form?	
11.	Does the application package include a Tax Exemption Affirmation Letter?	
12.	Does the application package include the applicant's current fiscal year budget?	
13.	Does the application package include the applicant's most recent	



	audited financial statements?	
14.	Does the application package include a Separation of Duties Policy as described in section 3.4.g. of the RFA?	
15.	Is the applicant registered in the System for Award Management (SAM)?	
16.	If applicable, does the application package include letters of support from other entities?	
17.	If applicable, does the application include resumes of key personnel mentioned in the proposal?	

## **APPENDICES**

Appendix 1 – General Terms and Conditions

Appendix 2 – Promises, Certifications, Assertions, and Assurances

Appendix 3 – Cover Sheet

Appendix 4 – Example of Grant Budget